

REMARKS

Claims 2-34 are now pending in the application. By this paper, Claims 2-6, 8-11, and 13-16 have been amended. The basis for these amendments can be found throughout the specification, claims, and drawings originally filed. No new matter has been added. The preceding amendments and the following remarks are believed to be fully responsive to the outstanding Office Action and are believed to place the application in condition for allowance.

REJECTION UNDER 35 U.S.C. § 112

Claims 2-16 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

This rejection is respectfully traversed.

Applicants have amended Claims 2-6, 8-11, and 13-16 to correct a typographical error. Specifically, Claims 2-6, 8-11, and 13-16 have been amended to depend from Claim 34 rather than from Claim 35. Applicants respectfully submit that Claims 2-6, 8-11, and 13-16 are in condition for allowance. Reconsideration and withdrawal of the rejections is respectfully requested.

REJECTION UNDER 35 U.S.C. § 103

Claims 3, 8, 9, 14-16 and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshikawa et al. (U.S. Pat. No. 4,506,518) in view of Nagatomo et al. (U.S. Pat. No. 4,494,383) and Alsenz (U.S. Pat. No. 5,035,119).

Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshikawa et al. (U.S. Pat. No. 4,506,518) in view of Nagatomo et al. (U.S. Pat. No. 4,494,383) and Alsenz (U.S. Pat. No. 5,035,119) as applied to claim 3 above, and further in view of Takizawa et al. (U.S. Pat. No. 4,962,648).

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshikawa et al. (U.S. Pat. No. 4,506,518) in view of Nagatomo et al. (U.S. Pat. No. 4,494,383) and Alsenz (U.S. Pat. No. 5,035,119) as applied to claim 3 above, and further in view of Tanaka (U.S. Pat. No. 4,634,046).

Claims 2 and 4-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshikawa et al. (U.S. Pat. No. 4,506,518) in view of Nagatomo et al. (U.S. Pat. No. 4,494,383) and Alsenz (U.S. Pat. No. 5,035,119) as applied to claim 3 above, and further in view of Bendtsen (U.S. Pat. No. 5,396,780).

Claims 17-19, 22-23, 25, 27-28 and 31-33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshikawa et al. (U.S. Pat. No. 4,506,518) in view of Nagatomo et al. (U.S. Pat. No. 4,494,383) and Alsenz (U.S. Pat. No. 5,035,119) as applied to claim 3 above, and further in view of Schaeffer et al. (U.S. Pat. No. 5,440,894).

Claims 20-21, 26 and 29-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshikawa et al. (U.S. Pat. No. 4,506,518) in view of Nagatomo et al. (U.S. Pat. No. 4,494,383), Alsenz (U.S. Pat. No. 5,035,119) and Schaeffer et al. (U.S. Pat. No. 5,440,894) as applied to claim 17 above, and further in view of Bendtsen (U.S. Pat. No. 5,396,780) as applied to claim 2 above.

Claim 24 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshikawa et al. (U.S. Pat. No. 4,506,518) in view of Nagatomo et al. (U.S. Pat. No. 4,494,383), Alsenz (U.S. Pat. No. 5,035,119) and Schaeffer et al. (U.S. Pat. No. 5,440,894) as applied to claim 17 above, and further in view of Tanaka (U.S. Pat. No. 4,634,046) as applied to claim 10 above.

These rejections are respectfully traversed.

As the basis for each of his rejections, the Examiner states that it would have been obvious to one of ordinary skill in the art at the time of the invention to control a compressor and a valve using duty cycle control in light of the compressor and valve control system of Yoshikawa and the valve control systems of Nagatomo and Alsenz. Applicants respectfully disagree.

The cited prior art fails to teach or suggest a controller generating a variable duty cycle control signal in response to a property indicating cooling demand and modulating both compressor capacity and valve position according to the variable duty cycle control signal. Because the Examiner has not shown this claimed feature in the prior art, he has failed to make a prima facie case of obviousness.

To establish a prima facie case of obviousness, three basic criteria must be met:

- (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or the combined reference teachings;
- (2) there must be a reasonable expectation of success; and
- (3) the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on Applicants' disclosure. *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991).

Yoshikawa teaches a control condition selector (49) that includes a judging table for selectively changing operational conditions of a variable speed compressor (2), a blower (6), and an expansion valve (4). See Yoshikawa at Col. 9, ln. 68, Col. 10, Ins. 1-8, and Table 1. Yoshikawa fails to teach or suggest use of a pulse width modulated variable capacity compressor. Furthermore, Yoshikawa fails to teach a controller providing a variable duty cycle control signal to both a compressor and a valve. Rather, Yoshikawa teaches a variable-speed compressor and an expansion valve controlled by a stepper motor (28). See Yoshikawa at Col. 3, Ins. 7-33 and at Col. 4, Ins. 30-34.

First, the combination of prior art references does not teach or suggest all of the claim limitations. None of the references teach or suggest applying a variably duty cycle control signal to both a compressor and to a valve.

Second, the Examiner has not established some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; nor has the Examiner shown a reasonable expectation of success. In fact, Yoshikawa's variable speed compressor teaches away from the alternative variable duty cycle approach for non-variable speed compressors.

Because Yoshikawa, Nagatomo, and Alsenz do not teach or suggest each of the claim limitations, and further teach away from a combination, thus negating any reasonable expectation of success, Applicants' invention is not taught or suggested by the prior art and reconsideration and withdrawal of the rejection is respectfully requested. The remaining cited prior art fails to cure these deficiencies.

Independent Claims 34 and 17, as well as Claims 2-16 and 18-33, respectively dependent therefrom, are in a condition for allowance in light of the art of record. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

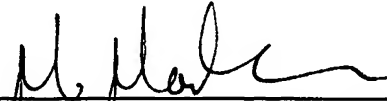
CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the

Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: September 26, 2005

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